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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/804,083	03/13/2001	Katsutoshi Nosaki	107348-00096	9107

7590

12/13/2002

ARENT FOX KINTNER PLOTKIN & KAHN, PLLC
Suite 600
1050 Connecticut Avenue, N.W.
Washington, DC 20036-5339

EXAMINER

PARSONS, THOMAS H

ART UNIT	PAPER NUMBER
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1741

DATE MAILED: 12/13/2002

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/804,083

Applicant(s)

NOSAKI ET AL.

Examiner

Thomas H Parsons

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

This is in response to the preliminary amendment filed 18 November 2002.

The Examiner finds persuasive the Applicants' argument that the amendment filed 3 September 2002 (paper no. 9) does not introduce new matter. The Examiner agrees that Figure 2 of the instant case shows an anode and cathode of uniform thickness throughout. Therefore, the amendment filed 3 September 2002 has been entered and the claims have been examined on their merits as set forth below.

Claim Rejections - 35 USC § 103

1. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga et al. (5,667,647), and further in view of Dempsey et al. (4,311,569)

Claim 1: Suga et al. disclose an electrolytic apparatus comprising a plurality of electrolytic cells each having an ion exchange film, an anode, and a cathode, the anode and cathode being arranged on opposite sides of the ion exchange film, respectively, the electrolytic cells being developed on a hypothetical plane and electrically connected in series to one another (Figure 1(A) showing an electrolytic cell having an ion exchange film 3, electrodes 7 of positive (anode) and negative pole (cathode) and vertically oriented on a horizontal plane; Figure 3 showing a plurality of electrolytic cells connected in series; col. 1:10-27; col. 1:56 through col. 2:4; col. 3: 6-8 and 53-58).

Suga et al. do not disclose a solid polymer electrolyte membrane, and plate shaped anodes and cathodes having a uniform thickness throughout.

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Dempsey et al. disclose in Figures 1 and 2 a solid polymer electrolyte membrane (13), and a plate shaped anode (11) and a cathode (12) having a uniform thickness throughout (col. 4: 44-62; and, col. 5: 26-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the ion exchange membrane, the anode and the cathode for the solid polymer electrolyte membrane, the anode and the cathode of Dempsey et al. because both are concerned with electrolytic cell for gas generation and Dempsey et al. teach a solid polymer electrolyte membrane, an anode and a cathode that would have provided improved performance, improved stability and reduced cost by using a catalyst to concentrate or produce gases by electrolysis.

Claim 2: Suga et al. disclose a solar cell serving as a power supply for the plurality of water electrolytic cells (Figure 3 showing solar power supply 23 comprising solar collector 24; and, col. 4: 51-61).

Claim 3: Suga et al. disclose that the anodes of the plurality of electrolytic cells are disposed on one hypothetical plane, and the cathodes of the plurality of electrical cells are disposed on another hypothetical plane, and a single water/oxygen flow path and a single hydrogen flow path are shared by the plurality of water electrolytic cells (Figure 3 showing a plurality of electrolytic cells wherein the plurality of anodes and cathodes are oriented on separate vertical planes and flow paths 13a and 13b shared by the electrolytic cells connected in series; col. 3: 59-col. 4:39).

Claims 4 and 5: The Suga et al. combination discloses a panel shaped solar cell connected to the plurality of electrolytic cells (Figure 3 showing solar collector 24 which appears

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to be panel shaped; and col. 4: 51-61) but does not disclose that the solar cell is superposed on the plurality of electrolytic cells.

However, it has been held that the solar cell which appears to read on that disclosed by the Suga et al. combination except with regard to the position of the solar cell is unpatentable as it has been held that claims to a solar cell which read on the prior art except with regard to the position of the solar cell were held unpatentable because shifting the position of the solar cell would not have modified the operation of the device. In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

Claim 6-8: The Suga et al. combination does not disclose that each water electrolytic cell is laminated and wherein each cathode and anode is plate shaped.

Dempsey et al. in Figures 1 and 2 disclose that the water electrolytic cell is laminated (i.e., anode 11 and cathode 12 are bonded directly to opposite surfaces of the solid polymer electrolyte membrane 13) and wherein anode 11 and cathode 12 are plate shape (i.e., the electrodes are thin electrodes bonded to membrane 13) (col. 2: 12-17; and, col. 7: 7-11 and 18-22).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the cell, the cathode and anode of the Suga et al. combination with that of Dempsey et al. for the reasons as set forth in claim 1 above.

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

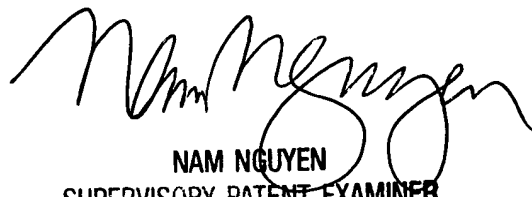
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U.S. Patent Nos. 6,066,248; 5,958,616; 5,484,512; 5,296,110; 4,975,171; 4,636,286; and, 4,312,738 disclose other solid polymer electrolytic cells comprising a solid polymer electrolyte sandwiched between plate shaped electrodes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas H Parsons whose telephone number is (703) 306-9072. The examiner can normally be reached on M-F (7:00-4:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (703) 308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Thomas H Parsons
Examiner
Art Unit 1741

December 10, 2002

NAM NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700